

Activeforge — Activity Book

A Spark & Anvil activity book — puzzles, questions, and fun from Activeforge.

Write in the book, circle your answers, and check the Answer Key at the back.

1. Body Systems and Exercise

Circle the correct answer

1. What is the primary function of skeletal muscles?

(A) To pull on bones and produce movement (B) To digest food in the stomach (C) To filter waste from the blood (D) To pump blood through the body

2. What happens to muscles when they contract during exercise?

(A) They shorten and become thicker, pulling on the attached bone (B) They stretch longer and become thinner (C) They turn into bone temporarily (D) They fill with air like a balloon

3. During a push-up, which muscles are doing most of the work to push your body upward?

(A) The chest muscles and triceps (B) The muscles in the neck and jaw (C) The calf muscles and ankles (D) The muscles in the fingers and toes

4. After running a long race, a student's legs feel shaky and weak. What is the most likely explanation for this?

(A) The leg muscles have become fatigued from repeated contractions and need time to recover (B) The leg muscles have permanently lost their strength (C) The bones in the legs have temporarily softened (D) The student's shoes are too tight and blocking blood flow

5. Why do muscles work in pairs, such as the biceps and triceps, rather than working alone?

(A) Because muscles work better when they are competing against each other (B) Because the body always needs two of everything for symmetry (C) Because muscles can only pull, not push, so a second muscle is needed to reverse the movement (D) Because one muscle gets tired and the other takes over as a backup

6. Approximately how many bones are in the adult human body?

(A) 106 (B) 50 (C) 500 (D) 206

Write the answer

7. What are the three main functions of the skeletal system?

Answer: _____

8. Why is it important for young athletes to get enough calcium in their diet?

Answer: _____

9. A student trips while running and lands on their outstretched hand. A doctor says the wrist has a small fracture. What should the student do before returning to physical activity?

Answer: _____

10. Weight-bearing exercises like running and jumping help build stronger bones, but swimming does not have the same bone-building effect. What explains this difference?

Answer: _____

Match each question to its answer

1. What is the main job of the cardiovascular system during exercise? →

2. What happens to your heart rate when you start exercising? →

3. A student checks their pulse before and after doing 20 jumping jacks. Their resting pulse is 72 beats per minute and their post-exercise pulse is 120 beats per minute. What does this change demonstrate? →

4. Two students run the same distance. Student A's heart rate returns to normal in 2 minutes, while Student B's takes 6 minutes. What does this suggest about their cardiovascular fitness? →

5. Regular aerobic exercise like jogging, cycling, or swimming strengthens the heart over time. Explain why a stronger heart benefits athletic performance. →

(A) It increases to pump more blood to the working muscles

(B) The heart is beating faster to meet the increased oxygen demand from the working muscles

(C) To deliver oxygen and nutrients to working muscles through the blood

(D) Student A likely has better cardiovascular fitness because their heart recovers more quickly

(E) A stronger heart pumps more blood with each beat, delivering oxygen more efficiently so muscles can work harder and longer

2. Nutrition and Fitness

Circle the correct answer

11. How many main food groups are identified in the USDA MyPlate guide?
(A) Seven (B) Three (C) Five (D) Ten
12. Which food group should make up the largest portion of your plate at most meals, according to MyPlate?
(A) Protein (B) Vegetables (C) Grains (D) Dairy
13. Why is it important to eat foods from all five food groups rather than just one or two?
(A) Because no single food group provides all the nutrients the body needs to function properly (B) Because eating from all groups makes meals look more colorful on the plate (C) Because foods from different groups all taste the same when combined (D) Because the government requires everyone to eat from each group every day
14. A student eats cereal with milk, a banana, and orange juice for breakfast. Which food groups are represented in this meal?
(A) Protein, vegetables, and grains (B) Fruits, vegetables, and dairy (C) Grains, dairy, and fruits (D) Grains, protein, and vegetables
15. A classmate says they only need to eat protein foods because they want to build muscle for sports. Evaluate whether this approach would actually help them perform better.
(A) This approach is correct because athletes only need protein (B) This approach would work because protein contains all other nutrients inside it (C) This approach is fine as long as they eat enough protein to equal 2,000 calories (D) This approach would hurt performance because the body also needs carbohydrates for energy, vitamins for recovery, and calcium for strong bones
16. What are the three macronutrients that provide energy (calories) to the body?
(A) Vitamins, minerals, and water (B) Calcium, iron, and zinc (C) Carbohydrates, proteins, and fats (D) Fiber, sugar, and salt

Write the answer

17. Which macronutrient is the body's preferred source of energy during physical activity?
Answer: _____
18. What is the primary role of protein in the body?
Answer: _____

19. A soccer player is choosing a pre-game meal two hours before kickoff. Which meal would provide the best sustained energy for the game?

Answer: _____

20. Many people think all dietary fat is unhealthy and should be avoided. Analyze whether this belief is accurate.

Answer: _____

Match each question to its answer

1. What percentage of the human body is made up of water? →

2. Why is it important to drink water before, during, and after exercise rather than only when you feel thirsty? →

3. During a hot outdoor practice, a basketball player drinks a large sports drink instead of water. When is a sports drink more appropriate than plain water? →

4. A student feels dizzy, has a headache, and their urine is dark yellow during a cross-country meet. What do these symptoms most likely indicate, and what should be done? →

5. A coach tells the team to drink 8 glasses of water per day. Another source says active kids need more. Evaluate how a young athlete should determine their own hydration needs. →

(A) About 60 percent

(B) These are signs of dehydration, and the student should stop exercising, move to shade, and drink water immediately

(C) Because by the time you feel thirsty, your body is already partially dehydrated and performance has begun to decline

(D) Monitor urine color (pale yellow means well-hydrated), weigh before and after practice to measure fluid loss, and drink extra during hot weather and intense training

(E) During intense exercise lasting more than 60 minutes, when the body needs to replace electrolytes lost in sweat

3. Warm-Up and Stretching

Circle the correct answer

21. What is the primary purpose of a warm-up before physical activity?

(A) To practice the sport at full speed before the official start (B) To gradually increase heart rate and blood flow to prepare muscles for exercise (C) To use up extra energy so you do not run too fast (D) To make the body sweat as much as possible before the game starts

22. How does increasing blood flow during a warm-up help muscles perform better?

(A) More blood delivers extra oxygen and nutrients to the muscles, fueling them for harder work (B) Blood flow washes away the muscles so they weigh less during exercise (C) Increased blood hardens the muscles like armor to prevent injuries (D) More blood makes muscles look bigger and more intimidating to opponents

23. A basketball team has 5 minutes before their game. Which warm-up activity would best prepare them to play?

(A) Sitting on the bench drinking water and visualizing the game (B) Light jogging followed by basketball-related movements like shuffling, arm circles, and practice layups (C) Sitting in a circle and holding static stretches for 30 seconds each (D) Running an all-out sprint immediately to get the heart rate up as fast as possible

24. A student sprints at full speed without warming up and pulls a hamstring muscle. Explain the physiological reason why skipping the warm-up made this injury more likely.

(A) Cold muscles are less elastic and more susceptible to tearing because they have not received the increased blood flow and temperature that make them flexible (B) The muscle pulled because the student ate too much food before running (C) The student pulled the muscle because they are not naturally talented at sprinting (D) Skipping the warm-up had no effect — the injury was caused by running too slowly

25. Some athletes argue that warm-ups waste valuable practice time. Evaluate this claim considering both short-term and long-term effects on performance and safety.

(A) The claim is correct because every minute of warm-up is a minute of lost skill practice (B) Warm-ups only matter for beginner athletes, not experienced ones (C) The claim is correct because professional athletes never warm up before games (D) The claim is flawed because warm-ups reduce injury risk and improve performance quality, making the remaining practice time more productive and keeping athletes healthy long-term

26. What is dynamic stretching?

(A) Stretching while standing perfectly still for 60 seconds (B) Stretching only done by professional gymnasts (C) Stretching that uses heavy weights to force muscles longer (D) Stretching that involves controlled movements through a full range of motion without holding a position

Write the answer

27. Why is dynamic stretching recommended before exercise while static stretching is recommended after exercise?

Answer: _____

28. Which of the following is an example of a dynamic stretch appropriate for a soccer warm-up?

Answer: _____

29. Research has shown that holding a static stretch for 60 seconds before sprinting can temporarily reduce sprint speed. What is the most likely physiological explanation?

Answer: _____

30. A gymnastics coach uses static stretching before practice because the sport requires extreme flexibility. A track coach uses only dynamic stretching before sprint practice. Evaluate whether both coaches are making reasonable decisions for their sport.

Answer: _____

Match each question to its answer

1. What is flexibility? →

2. Why might a person's flexibility differ between their left and right sides of the body? →

3. A student cannot touch their toes during a sit-and-reach test. If they practice stretching their hamstrings consistently for 4 weeks, what improvement would they likely see? →

4. A swimmer has excellent shoulder flexibility but limited hip flexibility, while a martial artist has excellent hip flexibility but limited shoulder flexibility. What explains this difference? →

5. Some students believe that being extremely flexible — like doing a full split — is always better than having average flexibility. Assess whether this belief is accurate. →

(A) Their hamstring flexibility would gradually increase, allowing them to reach further in the sit-and-reach test

(B) The ability of a joint to move through its complete range of motion

(C) Excessive flexibility without corresponding muscle strength can actually destabilize joints and increase injury risk, so optimal flexibility varies by sport and individual

(D) Because the dominant side is often used more and may develop different muscle tightness patterns than the non-dominant side

(E) Flexibility is joint-specific and develops most in the joints that are regularly moved through their full range of motion during training

4. Team Sports Fundamentals

Circle the correct answer

31. Why do team sports have rules?

(A) To guarantee that the best team always wins every time (B) To make the game as complicated as possible so fewer people can play (C) To ensure fair play, keep participants safe, and create a structured game that everyone can enjoy (D) To give referees something to do during the game

32. In basketball, what is a 'zone defense' strategy?

(A) A rule that prevents players from entering certain areas of the court (B) A strategy where all five players stand in the same spot on the court (C) An offensive strategy where players only shoot from one zone (D) A defensive strategy where each player guards a specific area of the court rather than a specific opponent

33. A soccer team is losing 1-0 with 10 minutes left. The coach moves a defender to play forward. What strategic trade-off is the coach making?

(A) The coach is accepting more defensive risk in exchange for greater attacking power to try to score an equalizing goal (B) The coach is trying to confuse the referee about player positions (C) There is no trade-off because more forwards always makes a team better (D) The coach is punishing the defender for playing poorly

34. A volleyball team notices that the opposing team struggles to return serves directed to the back-left corner. How should they use this observation strategically?

(A) Direct more serves to the back-left corner to exploit the weakness while watching for adjustments the opposing team might make (B) Serve to the front-right corner instead because it is the opposite location (C) Ignore the observation because exploiting weaknesses is unsportsmanlike (D) Tell the opposing team about their weakness so they can fix it during the game

35. In many sports, teams that practice set plays (predetermined movement patterns) perform better than teams that rely entirely on improvisation. However, the best teams combine both. Explain why pure improvisation and pure set plays each have limitations.

(A) There is no difference because all plays look the same during a fast game (B) Set plays are always perfect and improvisation always fails in every situation, and this is the standard approach used in most cases (C) Improvisation only works in individual sports, never in team sports, making this the most widely accepted explanation (D) Set plays become predictable if overused because opponents learn to anticipate them, while pure improvisation lacks coordination because teammates cannot predict each other's movements

36. What does sportsmanship mean?

(A) Letting the other team win because you feel sorry for them (B) Treating opponents, teammates, coaches, and officials with respect and fairness while competing with integrity (C) Winning every game no matter what it takes (D) Only being nice to people on your own team

Write the answer

37. Why is shaking hands with the opposing team after a game considered an important tradition in many sports?

Answer: _____

38. During a close basketball game, a referee makes a call you strongly disagree with. What is the sportsmanlike way to handle this situation?

Answer: _____

39. A star player on the winning team celebrates by taunting the losing team. Some fans say this is acceptable because the player earned the right to celebrate. Evaluate this argument.

Answer: _____

40. A teammate gets frustrated after making an error and starts blaming others. How can you respond in a way that demonstrates good sportsmanship and supports your teammate?

Answer: _____

Match each question to its answer

1. In most team sports, why are players assigned to specific positions rather than allowing everyone to go wherever they want? →

2. What is the general role of a midfielder in soccer? →

3. A basketball coach asks the tallest player to play center and the fastest player to play point guard. What principle is the coach using to assign positions? →

4. In volleyball, the libero wears a different color jersey than their teammates. This player can substitute freely but cannot serve, attack above the net height, or set from in front of the attack line for an attacker. Why does this specialized defensive role exist? →

5. Many coaches encourage young athletes to try multiple positions rather than specializing in one position early. Create an argument supporting this multi-position approach for youth sports. →

(A) Playing multiple positions develops a broader understanding of the game, builds diverse skills, helps identify the best long-term fit, and reduces overuse injuries from repetitive movements

(B) Positions ensure the entire field is covered, responsibilities are clear, and players can specialize in the skills their position requires

(C) Matching each player's physical attributes and skills to the position that best utilizes their strengths

(D) The libero role allows teams to have a defensive specialist who improves ball control and passing without counting against substitution limits, strengthening the back row

(E) To connect defense and attack by controlling the ball in the middle of the field, distributing passes, and supporting both offensive and defensive play

5. Individual Sports and Activities

Circle the correct answer

41. What are the two main categories of events in track and field?

(A) Indoor events and outdoor events (B) Team sports and individual sports (C) Swimming events and cycling events (D) Track events (running races) and field events (jumping and throwing)

42. Why do sprinters use starting blocks at the beginning of a race?

(A) Starting blocks provide a solid surface to push against, allowing a more powerful and explosive start (B) Starting blocks keep sprinters from falling over before the race (C) Starting blocks are only decorative and have no real purpose (D) Starting blocks measure how fast each runner leaves the line

43. A student wants to improve their long jump distance. Which phase of the jump should they focus on to maximize their result?

(A) The landing phase, where they should try to bounce forward after touching down (B) The warm-up phase, because stretching alone determines jump distance (C) The walking-back phase, because resting between jumps is most important (D) The takeoff phase, where they convert running speed into upward and forward momentum

44. In a 400-meter race, why do runners in the outer lanes start ahead of runners in the inner lanes even though they all finish at the same line?

(A) Because the outer lanes have a longer circumference around the curve, so the staggered start equalizes the total distance (B) Because outer lane runners are usually slower and need a head start (C) Because the timing equipment only works when runners finish at the same point (D) Because the inner lane is considered the best position and deserves a handicap

45. A school is designing a new track and field program for beginners. Evaluate which combination of events would best develop a well-rounded young athlete.

(A) Only sprinting events because speed is the most important athletic quality (B) Only throwing events because they build the most strength (C) Only long-distance running because endurance matters more than anything else (D) A mix of one sprint, one distance run, one jumping event, and one throwing event to develop speed, endurance, power, and coordination

46. What are the four competitive swimming strokes recognized in official swimming competitions?

(A) Butterfly, cannonball, treading water, and breaststroke (B) Freestyle, sidestroke, doggy paddle, and backstroke (C) Diving, backstroke, water polo stroke, and freestyle (D) Freestyle (front crawl), backstroke, breaststroke, and butterfly

Write the answer

47. Why is it important to exhale underwater and inhale when your mouth clears the surface while swimming?

Answer: _____

48. A swimmer notices they are drifting to one side while doing the backstroke. What technique adjustment should they make?

Answer: _____

49. A community pool has rules requiring swimmers to stay in their designated lane, swim in one direction per side of the lane, and never dive into shallow water. Analyze why each of these rules exists.

Answer: _____

50. Explain why learning to float on your back is considered one of the most important survival swimming skills.

Answer: _____

Match each question to its answer

1. What is the name of the padded floor surface used in gymnastics to cushion landings and tumbling? →

2. Why is core strength especially important for gymnasts compared to many other athletes? →

3. A beginning gymnast is learning a forward roll. What is the correct body position they should maintain throughout the roll? →

4. Gymnasts spend significant time on flexibility training in addition to strength training. Analyze why both qualities are equally necessary for the sport. →

5. A student who has never done gymnastics wants to learn a backflip by watching

online videos. Evaluate this approach and explain what they should do instead. →

(A) Core muscles stabilize the body during rotations, inversions, and balance positions that require precise body control in the air and on apparatus

(B) A gymnastics mat or spring floor

(C) This is dangerous because a backflip requires proper progression, spotting, and safety equipment that videos cannot provide; they should learn from a qualified coach in a gym with proper mats and spotting

(D) Chin tucked to chest, back rounded, hands placed on the mat, and body curled into a tight ball shape

(E) Strength provides the power for jumps and holds, while flexibility allows the wide range of motion needed for splits, leaps, and proper form on all apparatus

6. Sports Science

Circle the correct answer

51. What is biomechanics?

(A) The study of which foods give athletes the most energy (B) The study of how to build robots that play sports (C) The study of how to design sports equipment for sale (D) The study of how forces act on the body and how the body produces movement

52. Why does a baseball pitcher rotate their hips before their arm comes forward during a pitch?

(A) Hip rotation is just a style preference and does not affect pitch speed (B) Hip rotation generates force from the large muscles of the legs and core, which transfers through the torso to the arm, producing greater throwing speed than arm strength alone (C) Hip rotation only helps with balance and has nothing to do with throwing power (D) Pitchers rotate their hips to confuse the batter about where the ball will go

53. A basketball player wants to jump higher for rebounds. Based on biomechanics principles, what should they focus on during their jump preparation?

(A) Keeping the legs completely straight and only using the ankle muscles to jump, and this has been consistently demonstrated in practice (B) Leaning forward as far as possible before jumping to gain momentum, making this the most widely accepted explanation (C) Bending deeper at the knees and hips before jumping to create a longer force application time, then extending all joints explosively and using arm swing for additional upward momentum (D) Holding their breath to make their body lighter during the jump, as this directly follows from the underlying principles

54. When a gymnast lands from a vault, they bend their knees upon impact rather than landing with straight legs. Analyze how this technique reduces injury risk using biomechanics principles.

(A) Knee bending is purely for balance and does not change the forces involved (B) Bending the knees increases the time over which the landing force is absorbed, reducing the peak force on joints and bones compared to the sudden stop of a straight-leg landing (C) Bending the knees is only for scoring purposes and has no physical benefit (D) Bent knees make the gymnast shorter, which reduces the distance they fall

55. A tennis coach claims that proper technique is more important than raw strength for generating powerful serves. Evaluate this claim using biomechanics concepts.

(A) The claim is supported because proper technique utilizes the full kinetic chain, transferring force efficiently from legs through core to arm, while raw strength without coordination wastes energy and produces less racket speed (B) Technique and strength are completely unrelated to serve speed, as this directly follows from the underlying principles (C) The claim only applies to beginners, not to advanced players, making this the most widely accepted explanation (D) The claim is wrong because the strongest player always has the fastest serve

56. What is the standard formula used to estimate a person's maximum heart rate?

(A) Your resting heart rate multiplied by 2 (B) 100 plus your age in years (C) Your weight in pounds divided by 2 (D) 220 minus your age in years

Write the answer

57. Why do different exercise intensities correspond to different heart rate zones, and how does the body's energy system change across these zones?

Answer: _____

58. A 14-year-old student wants to train in the moderate-intensity zone (60-70% of max heart rate) for cardiovascular health. Calculate their target heart rate range.

Answer: _____

59. A runner trains exclusively in the low-intensity zone (50-60% max HR) for three months but sees no improvement in race times. Analyze why this training approach is insufficient for competitive performance.

Answer: _____

60. Explain why resting heart rate decreases as a person becomes more cardiovascularly fit over time.

Answer: _____

Match each question to its answer

1. What are the three types of muscle tissue found in the human body? →
2. Why do muscles grow larger and stronger when a person follows a regular resistance training program? →
3. A student wants to strengthen their quadriceps for soccer. Which exercise would most effectively target this muscle group? →
4. An athlete trains only their 'mirror muscles' — chest, biceps, and abs — while neglecting their back, hamstrings, and posterior chain. Analyze the potential consequences of this imbalanced training approach. →
5. A coach recommends that a young athlete perform compound exercises like squats and deadlifts rather than isolation exercises like leg extensions. Evaluate this recommendation for a developing athlete. →

(A) Squats or lunges, because these exercises require the quadriceps to extend the knee under load while supporting body weight

(B) Skeletal muscle, cardiac muscle, and smooth muscle

(C) Resistance training causes microscopic damage to muscle fibers, and during recovery the body repairs them thicker and stronger than before in a process called hypertrophy

(D) Compound exercises are superior for developing athletes because they train multiple muscle groups simultaneously, build functional movement patterns, improve coordination, and more closely replicate the demands of sports

(E) Muscle imbalances can lead to poor posture, reduced athletic performance, and increased injury risk because opposing muscle groups become disproportionately weak relative to their counterparts

7. Fitness Assessment & Goal Setting

Circle the correct answer

61. What does the acronym SMART stand for when setting fitness goals?

(A) Strategic, Muscular, Aerobic, Responsive, and Trained (B) Simple, Meaningful, Accurate, Realistic, and Tested (C) Specific, Measurable, Achievable, Relevant, and Time-bound (D) Strong, Motivated, Active, Ready, and Tough

62. Which of the following is a health-related component of fitness?

(A) Cardiovascular endurance, the ability of the heart and lungs to supply oxygen during sustained activity (B) Reaction time, how quickly you respond to a stimulus (C) Coordination, the ability to use senses and body parts together smoothly (D) Speed, how fast you can move your body from one place to another

63. What fitness test is commonly used to measure cardiovascular endurance in schools?

(A) The curl-up test, which counts how many crunches you can do in a set time (B) The standing long jump, which measures how far you can jump from a standstill (C) The PACER test (Progressive Aerobic Cardiovascular Endurance Run), a 20-meter shuttle run with increasing speed (D) The sit-and-reach test, which measures how far you can stretch forward

64. What does the term 'resting heart rate' refer to?

(A) The heart rate you maintain during a moderate-intensity workout (B) The highest heart rate you can safely reach during intense exercise (C) The number of times your heart beats per minute while you are completely at rest, typically measured first thing in the morning (D) The rate at which your heart slows down after finishing exercise

65. In the FitnessGram assessment, which test measures flexibility?

(A) The sit-and-reach test, where you sit on the floor with legs extended and reach forward toward or past your toes (B) The push-up test, where you lower and raise your body using your arms (C) The trunk lift, where you lie face down and lift your upper body off the floor (D) The shoulder stretch, where you try to touch your hands behind your back

66. Why is it important to establish a baseline measurement before starting a fitness improvement plan?

(A) A baseline is only needed so your teacher can assign you a grade at the end of the semester (B) A baseline gives you a starting point to measure progress against, so you can see how much you have improved and adjust your plan if needed (C) A baseline tells you the maximum fitness level you can ever achieve in your lifetime (D) A baseline determines which sport you should play based on your natural talent

Write the answer

67. What is the difference between muscular strength and muscular endurance?

Answer: _____

68. Why might two students who train the same way show different fitness test results?

Answer: _____

69. What does it mean when a fitness goal is 'time-bound'?

Answer: _____

70. How does the Healthy Fitness Zone in FitnessGram differ from a percentile ranking?

Answer: _____

Match each question to its answer

1. A student's PACER score is 25 laps but the Healthy Fitness Zone for their age starts at 32 laps. Which SMART goal would best help them improve? →
2. You want to track your fitness progress over a school semester. Which method would give you the most useful data? →
3. A student can do 8 push-ups but wants to reach 20 push-ups. Using the principle of progressive overload, what should they do? →
4. Your resting heart rate has dropped from 82 to 74 beats per minute over two months of regular cardio exercise. What does this change indicate? →
5. A student's sit-and-reach score is 2 inches below the Healthy Fitness Zone. Which daily habit would most effectively help them reach the zone? →

(A) Keep a fitness journal recording assessment scores, workout details, and how you felt, then compare results from the beginning, middle, and end of the semester

(B) Increase PACER score from 25 to 32 laps within 8 weeks by jogging 15-20 minutes three times per week and adding one extra lap per week

(C) Perform 10-15 minutes of static hamstring and lower back stretching after warming up each day, holding each stretch for 20-30 seconds

(D) Gradually increase the number of push-ups by 1-2 each week, ensuring proper form, and include rest days to allow muscles to recover and grow stronger

(E) Your cardiovascular fitness has improved because your heart is pumping blood more efficiently, requiring fewer beats per minute at rest

8. Lifetime Fitness & Wellness

Circle the correct answer

71. What is a 'lifetime activity' in physical education?

(A) A physical activity that can be enjoyed throughout a person's entire life, from childhood into old age, such as swimming, cycling, hiking, or yoga (B) Any sport that has professional leagues and can be played at the Olympic level (C) An exercise that must be performed every single day for life to have any health benefit (D) An activity that takes a lifetime to learn because it is extremely difficult

72. How many dimensions of wellness are typically recognized in health education?

(A) There are exactly two dimensions: physical health and mental health, with nothing else (B) There are commonly recognized dimensions including physical, emotional, social, intellectual, and spiritual wellness, with some models adding environmental, occupational, and financial wellness (C) There is only one dimension of wellness, which is physical fitness measured by exercise (D) Wellness has three

dimensions: strength, speed, and flexibility

73. What is the recommended amount of moderate-to-vigorous physical activity (MVPA) per day for adolescents ages 6-17?

(A) Two hours of vigorous exercise on weekends is enough for the entire week (B) At least 60 minutes of moderate-to-vigorous physical activity every day, including aerobic activity, muscle-strengthening, and bone-strengthening activities (C) At least 20 minutes of light activity three times per week is sufficient (D) Only 10 minutes per day as long as it is extremely intense exercise

74. What does the FITT principle stand for in exercise programming?

(A) Fitness, Improvement, Training, and Testing (B) Fast, Intense, Tough, and Tiring (C) Frequency (how often), Intensity (how hard), Time (how long), and Type (what kind of activity) (D) Flexibility, Isometrics, Toning, and Treadmill

75. What is the 'talk test' used for during exercise?

(A) It is a simple method to estimate exercise intensity — if you can talk but not sing, you are in the moderate-intensity zone; if you can only say a few words before pausing to breathe, you are in the vigorous zone (B) It checks whether your vocal cords are strong enough to handle the vibrations from exercise, which is why this approach is recommended by experts (C) It tests whether you can memorize and recite health facts while running on a treadmill, which is the most common explanation for this phenomenon (D) It measures how loudly you can shout after finishing a sprint workout, which is the most common explanation for this phenomenon

76. Why do many adults stop exercising after they leave school, and how can understanding this pattern help you now?

(A) Adults do not exercise because all gyms and fitness facilities are too expensive for anyone to afford (B) People stop exercising because physical activity has no health benefits after adolescence (C) Adults stop exercising because the human body is designed to become sedentary after age 18 (D) Many adults relied on organized school sports for physical activity and never developed independent exercise habits, so building self-directed fitness skills and finding enjoyable lifetime activities now creates habits that persist after school ends

Write the answer

77. How does physical activity benefit emotional and mental wellness, not just physical health?

Answer: _____

78. What is the difference between health-related fitness and skill-related fitness, and why does it matter for lifetime wellness?

Answer: _____

79. Why is finding physical activities you genuinely enjoy considered one of the most important factors for lifelong fitness?

Answer: _____

80. How does the principle of reversibility apply to fitness, and why is it relevant to lifetime wellness?

Answer: _____

Match each question to its answer

1. A high school student who played basketball all through middle school has no team to join at their new school. Using the FITT principle, how should they design a replacement exercise routine? →

2. You notice that you feel anxious and have trouble sleeping before big tests. Which wellness strategy combining physical activity and stress management would best address both issues? →

3. Your family is planning a weekend outing. How could you suggest an activity that promotes physical, social, and emotional wellness for everyone? →

4. A student wants to start a yoga practice but feels embarrassed because they are not flexible. How should they apply what they know about fitness principles to overcome this barrier? →

5. Using the target heart rate zone concept, how would a 14-year-old calculate their moderate-intensity exercise zone? →

(A) Apply the principle of individuality — everyone starts at their own level, and flexibility improves with consistent practice over time. Beginners should use modifications, focus on personal progress rather than comparison, and understand that yoga is about improving your own range of motion

(B) Apply FITT by exercising 4-5 days per week (Frequency), at moderate-to-vigorous intensity matching basketball's cardiovascular demands (Intensity), for 30-60 minutes per session (Time), choosing activities like running, cycling, or pickup basketball at a community center (Type)

(C) Estimate maximum heart rate as 220 minus age ($220 - 14 = 206$ bpm), then calculate the moderate-intensity zone as 50-70% of maximum: 103 to 144 beats per minute

(D) Practice 20-30 minutes of moderate exercise like walking or yoga in the late afternoon before test days, which reduces stress hormones, releases calming endorphins, and improves sleep quality

(E) Suggest a family hike on a nature trail, which provides physical activity

(walking/climbing), social bonding (shared experience and conversation), and emotional wellness (stress relief from nature and quality time together)

9. Olympic Sports & Athletic Training

Circle the correct answer

81. Approximately how many bones are in the adult human body?

- (A) 206 (B) 500 (C) 50 (D) 106

82. What is a calorie?

- (A) A type of vitamin found in fruits and vegetables (B) A mineral that strengthens bones and teeth (C) A chemical that makes food taste sweet (D) A unit that measures the amount of energy in food

83. A student sprints at full speed without warming up and pulls a hamstring muscle. Explain the physiological reason why skipping the warm-up made this injury more likely.

- (A) Skipping the warm-up had no effect — the injury was caused by running too slowly (B) The student pulled the muscle because they are not naturally talented at sprinting (C) Cold muscles are less elastic and more susceptible to tearing because they have not received the increased blood flow and temperature that make them flexible (D) The muscle pulled because the student ate too much food before running

84. Why is shaking hands with the opposing team after a game considered an important tradition in many sports?

- (A) It is required by law in all countries where sports are played (B) It gives players a chance to share secret strategies with each other (C) It is only done to check if the other team's hands are sweaty (D) It shows mutual respect between competitors and acknowledges that both teams gave their best effort regardless of the outcome

85. A community pool has rules requiring swimmers to stay in their designated lane, swim in one direction per side of the lane, and never dive into shallow water. Analyze why each of these rules exists.

- (A) Lane designation prevents collisions between swimmers of different speeds, one-way traffic maintains orderly flow, and no shallow diving prevents spinal injuries from hitting the bottom (B) The rules were created to limit how many people can use the pool at once (C) These rules exist only to make the lifeguard's job easier and have no safety purpose (D) Lane rules are just for competitive swimmers and do not apply to recreational swimming

86. A student wants to strengthen their quadriceps for soccer. Which exercise would most effectively target this muscle group?

(A) Calf raises, because the calves and quadriceps are the same muscle (B) Bicep curls, because arm strength improves leg power through body connection (C) Sit-ups, because all lower body strength comes from the core (D) Squats or lunges, because these exercises require the quadriceps to extend the knee under load while supporting body weight

Write the answer

87. Which of the following is a health-related component of fitness?

Answer: _____

88. A high school student who played basketball all through middle school has no team to join at their new school. Using the FITT principle, how should they design a replacement exercise routine?

Answer: _____

89. What is the main organ of the respiratory system?

Answer: _____

90. A student eats 2,000 calories in a day and burns 2,000 calories through body functions and physical activity. What happens to their body weight?

Answer: _____

Match each question to its answer

1. Why is dynamic stretching recommended before exercise while static stretching is recommended after exercise? →

2. What is the general role of a midfielder in soccer? →

3. What are the two main categories of events in track and field? →

4. A 14-year-old student wants to train in the moderate-intensity zone (60-70% of max heart rate) for cardiovascular health. Calculate their target heart rate range. →

5. In the FitnessGram assessment, which test measures flexibility? →

(A) The sit-and-reach test, where you sit on the floor with legs extended and reach forward toward or past your toes

(B) 124 to 144 beats per minute, calculated as $206 \text{ max HR} \times 0.60$ and 0.70

(C) Dynamic stretching activates muscles and increases blood flow for performance, while static stretching relaxes muscles and promotes recovery after they are already warm

(D) To connect defense and attack by controlling the ball in the middle of the field, distributing passes, and supporting both offensive and defensive play

(E) Track events (running races) and field events (jumping and throwing)

10. Dance & Rhythmic Movement

Circle the correct answer

91. Some athletes train at high altitudes where there is less oxygen in the air, then compete at lower altitudes. Evaluate why this training strategy might improve their performance.

(A) The thin air at high altitude makes muscles permanently lighter (B) High altitude makes athletes taller, giving them a physical advantage (C) Training with less oxygen causes the body to produce more red blood cells, which carry extra oxygen when returning to lower altitude (D) Athletes get used to less oxygen so they need less during competition

92. A student feels dizzy, has a headache, and their urine is dark yellow during a cross-country meet. What do these symptoms most likely indicate, and what should be done?

(A) These are signs of dehydration, and the student should stop exercising, move to shade, and drink water immediately (B) The student is allergic to running and should switch to a different sport (C) These are signs of eating too much, and the student should skip their next meal (D) These symptoms are normal during exercise and can be ignored

93. A cross-country runner increases their weekly mileage from 10 miles to 25 miles in a single week and develops shin splints. What training mistake most likely caused this injury?

(A) They wore the wrong color of running shoes for their foot type (B) They increased the training volume too quickly, not giving the body enough time to adapt to the higher workload (C) Shin splints are random and have nothing to do with training decisions (D) They ran on too many different surfaces during the week

94. What is the most fundamental element of teamwork in sports?

(A) Working together toward a shared goal by combining individual efforts into coordinated group action (B) Having every player score the same number of points (C) Making sure the best player gets the ball every time (D) Wearing matching uniforms so everyone looks the same

95. Explain why learning to float on your back is considered one of the most important survival swimming skills.

(A) Back floating is important only because it is tested in swim class (B) Floating on your back helps you see the sky to determine your location (C) Floating on your back makes you swim faster than any other position (D) Floating on your back allows you to rest and breathe indefinitely without expending energy, which can save your life if

you fall into deep water

96. A student with a VO₂ max of 35 ml/kg/min wants to improve their endurance for cross-country running. Describe how they should structure their training to increase their VO₂ max.

(A) Combine long slow runs to build aerobic base with interval training sessions at 90-95% max heart rate to push the oxygen delivery system to adapt and improve (B) Avoid running and only do yoga because flexibility improves oxygen use (C) Only run as fast as possible every day until exhaustion to force maximum adaptation (D) Train only with weightlifting because muscle mass determines VO₂ max

Write the answer

97. A fitness app recommends a student do 100 burpees every day to get fit fast. Evaluate whether this recommendation is appropriate for a 12-year-old beginner.

Answer: _____

98. A popular fitness influencer claims that their 30-day extreme workout challenge will 'transform your body completely.' Evaluate the validity of this claim using fitness principles.

Answer: _____

99. A student checks their pulse before and after doing 20 jumping jacks. Their resting pulse is 72 beats per minute and their post-exercise pulse is 120 beats per minute. What does this change demonstrate?

Answer: _____

100. During a hot outdoor practice, a basketball player drinks a large sports drink instead of water. When is a sports drink more appropriate than plain water?

Answer: _____

Match each question to its answer

1. What is a cool-down? →

2. Name two types of communication used during team sports. →

3. Karate emphasizes striking techniques like punches and kicks, while judo emphasizes throws and grappling. What do these differences reveal about the original purposes these arts were designed for? →

4. An athlete trains only their 'mirror muscles' — chest, biceps, and abs — while neglecting their back, hamstrings, and posterior chain. Analyze the potential consequences of this imbalanced training approach. →

5. What is the difference between muscular strength and muscular endurance? →

(A) Karate was designed for self-defense at a distance using strikes to keep attackers away, while judo was designed for close-range combat to control and subdue an opponent without striking

(B) Muscular strength is the maximum force a muscle can exert in a single effort, while muscular endurance is the ability of a muscle to repeat contractions over time without fatigue

(C) A period of gradually decreasing activity at the end of exercise to help the body return to its resting state

(D) Muscle imbalances can lead to poor posture, reduced athletic performance, and increased injury risk because opposing muscle groups become disproportionately weak relative to their counterparts

(E) Verbal communication (calling out plays, warnings, encouragement) and non-verbal communication (hand signals, eye contact, body positioning)

11. Water Safety & Aquatics

Circle the correct answer

101. A student notices they get a 'side stitch' (sharp pain below the ribs) when they start running without warming up. What is the most likely connection between the side stitch and the respiratory system?

(A) The student's ribs have shifted position due to running too fast (B) The lungs have expanded too much and are pressing against the ribs (C) Air has leaked out of the lungs and is trapped under the skin (D) The diaphragm muscle cramps when it is suddenly forced to work hard without being gradually prepared

102. What is energy balance?

(A) The amount of sunlight needed to grow food in a garden (B) The number of hours a person sleeps compared to hours awake (C) The relationship between the calories consumed through food and the calories burned through activity and body functions (D) The ability to stand on one foot without falling over

103. A student feels a sharp pain in their knee while running. Should they try to push through the pain and keep running?

(A) Yes, because stopping during a run shows weakness and poor character (B) It does not matter because knee pain during running is always harmless (C) Yes, because pain always goes away once the body warms up enough (D) No, they should stop immediately because sharp pain is the body's warning signal that something may be injured or at risk of injury

104. A volleyball team notices that the opposing team struggles to return serves directed to the back-left corner. How should they use this observation strategically?

- (A) Tell the opposing team about their weakness so they can fix it during the game
(B) Ignore the observation because exploiting weaknesses is unsportsmanlike
(C) Serve to the front-right corner instead because it is the opposite location
(D) Direct more serves to the back-left corner to exploit the weakness while watching for adjustments the opposing team might make

105. What are the four competitive swimming strokes recognized in official swimming competitions?

- (A) Butterfly, cannonball, treading water, and breaststroke
(B) Freestyle (front crawl), backstroke, breaststroke, and butterfly
(C) Freestyle, sidestroke, doggy paddle, and backstroke
(D) Diving, backstroke, water polo stroke, and freestyle

106. After losing an important basketball game, one player says 'The referees were terrible' while another says 'I need to improve my free throw shooting.' Analyze how these different responses reflect different psychological mindsets.

- (A) The first player is more mentally tough because they do not blame themselves
(B) The second player has low self-esteem because they are criticizing their own performance
(C) The first player has an external locus of control, blaming outside factors they cannot change, while the second player has an internal locus of control and growth mindset, focusing on factors within their power to improve
(D) Both responses are equally healthy ways to process a loss, which is why this approach is recommended by experts

Write the answer

107. Why is it important to establish a baseline measurement before starting a fitness improvement plan?

Answer: _____

108. Examine how social media can both positively and negatively influence a teenager's relationship with fitness and body image.

Answer: _____

109. What is one immediate effect of exercise on the body?

Answer: _____

110. A friend tells you that skipping meals before a game will make them lighter and faster. Analyze the flaws in this reasoning and explain why it could actually hurt performance.

Answer: _____

Match each question to its answer

1. What is dynamic stretching? →
2. In most team sports, why are players assigned to specific positions rather than allowing everyone to go wherever they want? →
3. Why do most martial arts classes begin and end with a bow? →
4. A swimmer wants to drop 5 seconds from their 100-meter freestyle time before the championship meet in 10 weeks. Using sports psychology goal-setting principles, how should they structure their goals? →
5. A student set a goal to 'get stronger' but after 6 weeks feels discouraged because they are unsure if they improved. What is the main problem with their goal? →

(A) Bowing shows respect for the training space, the instructor, and fellow students, reflecting the discipline and courtesy central to martial arts philosophy

(B) Set a long-term outcome goal of the 5-second drop, then break it into weekly process goals like improving flip turn technique, increasing underwater dolphin kicks, and hitting specific split times in practice

(C) Positions ensure the entire field is covered, responsibilities are clear, and players can specialize in the skills their position requires

(D) The goal is too vague — it lacks specific measurements, a defined target, and clear criteria for success, making it impossible to determine whether progress was made

(E) Stretching that involves controlled movements through a full range of motion without holding a position

12. Adventure & Outdoor Recreation

Circle the correct answer

111. What is the main job of the cardiovascular system during exercise?

(A) To deliver oxygen and nutrients to working muscles through the blood (B) To send electrical signals from the brain to the muscles (C) To break down food into small pieces for energy (D) To cool the body down by producing sweat

112. What does the term 'whole grain' mean on a food label?

(A) The food is made from one single large grain instead of many small ones (B) The grain was grown without any water or sunlight (C) The grain product contains all three parts of the grain kernel: bran, germ, and endosperm (D) The food package contains a whole box of grain with nothing removed

113. A gymnastics coach uses static stretching before practice because the sport requires extreme flexibility. A track coach uses only dynamic stretching before sprint practice. Evaluate whether both coaches are making reasonable decisions for their sport.

(A) Only the gymnastics coach is correct because all athletes need static stretching first (B) Both are reasonable because gymnastics requires maximum range of motion that justifies static stretching despite temporary power loss, while sprinting depends on explosive power that static stretching could impair (C) Neither coach is correct because stretching has no effect on any sport (D) Only the track coach is correct because static stretching is always wrong before exercise

114. A soccer team is losing 1-0 with 10 minutes left. The coach moves a defender to play forward. What strategic trade-off is the coach making?

(A) The coach is punishing the defender for playing poorly (B) The coach is accepting more defensive risk in exchange for greater attacking power to try to score an equalizing goal (C) There is no trade-off because more forwards always makes a team better (D) The coach is trying to confuse the referee about player positions

115. Why is core strength especially important for gymnasts compared to many other athletes?

(A) Gymnasts need core strength because their uniforms are tight (B) Core muscles stabilize the body during rotations, inversions, and balance positions that require precise body control in the air and on apparatus (C) Core muscles help gymnasts run faster on the vault runway (D) Core strength only matters for gymnasts who compete on the balance beam

116. What is biomechanics?

(A) The study of how to build robots that play sports (B) The study of how to design sports equipment for sale (C) The study of which foods give athletes the most energy (D) The study of how forces act on the body and how the body produces movement

Write the answer

117. Some people argue that fitness testing in schools is harmful because it embarrasses students who score poorly. Others argue it is essential for teaching self-assessment skills. Which position is better supported?

Answer: _____

118. A student wants to start a yoga practice but feels embarrassed because they are not flexible. How should they apply what they know about fitness principles to overcome this barrier?

Answer: _____

119. What are the three main functions of the skeletal system?

Answer: _____

120. Many people think all dietary fat is unhealthy and should be avoided. Analyze whether this belief is accurate.

Answer: _____

Match each question to its answer

1. What does the acronym RICE stand for in treating minor sports injuries? →
2. What does it mean to be a 'good teammate'? →
3. Gymnasts spend significant time on flexibility training in addition to strength training. Analyze why both qualities are equally necessary for the sport. →
4. Explain why resting heart rate decreases as a person becomes more cardiovascularly fit over time. →
5. A student can do 8 push-ups but wants to reach 20 push-ups. Using the principle of progressive overload, what should they do? →

(A) Gradually increase the number of push-ups by 1-2 each week, ensuring proper form, and include rest days to allow muscles to recover and grow stronger

(B) Rest, Ice, Compression, Elevation

(C) Strength provides the power for jumps and holds, while flexibility allows the wide range of motion needed for splits, leaps, and proper form on all apparatus

(D) A trained heart becomes larger and stronger, pumping more blood per beat (increased stroke volume), so it needs fewer beats per minute to deliver the same amount of blood at rest

(E) Supporting others through encouragement, fulfilling your own role reliably, and putting the team's success ahead of personal statistics

13. Body Systems and Exercise

Circle the correct answer

121. What is the primary function of skeletal muscles?

(A) To digest food in the stomach (B) To filter waste from the blood (C) To pump blood through the body (D) To pull on bones and produce movement

122. A food label shows that a single granola bar contains 12 grams of added sugar. The bar is marketed as a 'healthy sports snack.' What questions should you ask before trusting this marketing claim?

(A) How does 12 grams of added sugar compare to daily recommended limits, and does the bar provide meaningful nutrients like protein, fiber, and vitamins beyond just sugar? (B) You should ask if the sugar is colored differently from natural sugar, and this has been consistently demonstrated in practice (C) No questions are needed because all food labels are always accurate (D) The only question is whether the bar tastes good enough to eat, as this directly follows from the underlying principles

123. Design a 4-week fitness improvement plan for a student who wants to improve their push-up count from 10 to 18. What structure should the plan include?

(A) Do maximum push-ups every day for four weeks straight without any rest or variation, which is why this approach is recommended by experts (B) The plan should include a baseline test, progressive overload schedule adding 2 push-ups per week, 3-4 training sessions per week with rest days between, supplementary exercises for chest and triceps, and a reassessment at week 4 (C) Only practice push-ups during PE class once a week and hope for natural improvement, which is why this approach is recommended by experts (D) Focus entirely on running because cardiovascular fitness automatically improves push-up performance

124. How does increasing blood flow during a warm-up help muscles perform better?

(A) More blood makes muscles look bigger and more intimidating to opponents (B) More blood delivers extra oxygen and nutrients to the muscles, fueling them for harder work (C) Increased blood hardens the muscles like armor to prevent injuries (D) Blood flow washes away the muscles so they weigh less during exercise

125. A basketball player wants to jump higher for rebounds. Based on biomechanics principles, what should they focus on during their jump preparation?

(A) Holding their breath to make their body lighter during the jump, as this directly follows from the underlying principles (B) Bending deeper at the knees and hips before jumping to create a longer force application time, then extending all joints explosively and using arm swing for additional upward momentum (C) Keeping the legs completely straight and only using the ankle muscles to jump, and this has been consistently demonstrated in practice (D) Leaning forward as far as possible before jumping to gain momentum, making this the most widely accepted explanation

126. A student's sit-and-reach score is 2 inches below the Healthy Fitness Zone. Which daily habit would most effectively help them reach the zone?

(A) Run sprints every day since running naturally improves flexibility in the legs (B) Stretch only on the day before the next fitness test to get the best possible score (C) Perform 10-15 minutes of static hamstring and lower back stretching after warming up each day, holding each stretch for 20-30 seconds (D) Do as many sit-ups as possible each morning to strengthen the core muscles

Write the answer

127. Two approaches to youth fitness exist: one emphasizes competitive sports performance and winning, the other emphasizes personal improvement and enjoyment. Which approach better supports lifetime fitness? Defend your answer.

Answer: _____

128. A student cannot touch their toes during a sit-and-reach test. If they practice stretching their hamstrings consistently for 4 weeks, what improvement would they likely see?

Answer: _____

129. Explain how the belt ranking system used in many martial arts supports long-term student motivation and skill development.

Answer: _____

130. A tennis coach claims that proper technique is more important than raw strength for generating powerful serves. Evaluate this claim using biomechanics concepts.

Answer: _____

Match each question to its answer

1. What does the FITT principle stand for in exercise programming? →
2. Why does your breathing rate increase during vigorous exercise? →
3. A basketball coach asks the tallest player to play center and the fastest player to play point guard. What principle is the coach using to assign positions? →
4. A basketball team has 5 minutes before their game. Which warm-up activity would best prepare them to play? →
5. After running a long race, a student's legs feel shaky and weak. What is the most likely explanation for this? →

(A) Matching each player's physical attributes and skills to the position that best utilizes their strengths

(B) Frequency (how often), Intensity (how hard), Time (how long), and Type (what kind of activity)

(C) Light jogging followed by basketball-related movements like shuffling, arm circles, and practice layups

(D) Because the muscles need more oxygen and produce more carbon dioxide that must be removed

(E) The leg muscles have become fatigued from repeated contractions and need time to recover

14. Body Systems and Exercise

Circle the correct answer

131. In judo, the first skill students learn is how to fall safely, called ukemi. Why is falling practice taught before any throwing techniques?

(A) Because the judo ranking system requires falling tests before anything else (B) Because falling practice builds leg strength for later throwing techniques (C) Because falling is the only skill needed to win a judo match (D) Because students will be thrown many times during training and must know how to land safely to prevent injuries

132. Analyze why someone might choose cycling over team sports as their primary form of exercise as they transition from teenager to adult.

(A) People only switch to cycling because they were not talented enough to continue playing team sports (B) Team sports are always better than cycling and adults who cycle are missing out on the benefits of competition, which is the most common explanation for this phenomenon (C) Cycling has no cardiovascular benefit compared to team sports and is purely recreational, which is the most common explanation for this phenomenon (D) Cycling offers schedule flexibility (no team coordination needed), scalable intensity (commuting to vigorous training), low impact on joints, practical transportation value, solo or social options, and does not require a minimum number of participants to enjoy

133. What does the acronym SMART stand for when setting fitness goals?

(A) Strong, Muscular, Athletic, Rested, and Trained (B) Stretching, Monitoring, Adjusting, Recovering, and Testing (C) Specific, Measurable, Achievable, Relevant, and Time-bound (D) Speed, Movement, Agility, Reaction, and Timing

134. What does the term 'resting heart rate' refer to?

(A) The number of times your heart beats per minute while you are completely at rest, typically measured first thing in the morning (B) The rate at which your heart slows down after finishing exercise (C) The heart rate you maintain during a moderate-intensity workout (D) The highest heart rate you can safely reach during intense exercise

135. How many dimensions of wellness are typically recognized in health education?

(A) Wellness has three dimensions: strength, speed, and flexibility (B) There are commonly recognized dimensions including physical, emotional, social, intellectual, and spiritual wellness, with some models adding environmental, occupational, and financial wellness (C) There are exactly two dimensions: physical health and mental health, with nothing else (D) There is only one dimension of wellness, which is physical fitness measured by exercise

136. A student trips while running and lands on their outstretched hand. A doctor says the wrist has a small fracture. What should the student do before returning to physical activity?

(A) Soak the wrist in cold water for one minute and then play again (B) Ignore the pain because fractures heal themselves within hours (C) Wrap the wrist tightly and continue playing immediately (D) Wait for the bone to fully heal and get medical clearance before resuming sports

Write the answer

137. Why is it important to drink water before, during, and after exercise rather than only when you feel thirsty?

Answer: _____

138. A student's PACER score is 25 laps but the Healthy Fitness Zone for their age starts at 32 laps. Which SMART goal would best help them improve?

Answer: _____

139. Why is it important to exhale underwater and inhale when your mouth clears the surface while swimming?

Answer: _____

140. Weight-bearing exercises like running and jumping help build stronger bones, but swimming does not have the same bone-building effect. What explains this difference?

Answer: _____

Match each question to its answer

1. Two equally trained runners compete in a 5K race at elevation. Runner A lives and trains at sea level, while Runner B lives and trains at 7,000 feet elevation. Analyze why Runner B has an advantage. →

2. Create a proposal for a school wellness initiative that would help students develop sustainable fitness habits they can maintain after graduation. What would the program include and why? →

3. How does physical activity benefit emotional and mental wellness, not just physical health? →

4. A teammate gets frustrated after making an error and starts blaming others. How can you respond in a way that demonstrates good sportsmanship and supports your teammate? →

5. Why is calling 'I got it!' or 'Mine!' important when a ball is in the air between two teammates? →

(A) Exercise releases endorphins that improve mood, reduces stress hormones like cortisol, improves sleep quality, boosts self-esteem through accomplishment, and can reduce symptoms of anxiety and depression

(B) Runner B's body has adapted to lower oxygen availability by producing more red blood cells and hemoglobin, giving them superior oxygen-carrying capacity that provides an advantage when both run at the same elevation

(C) It prevents collisions and dropped balls by establishing which player will make the play so the other can move out of the way

(D) Acknowledge that everyone makes mistakes, offer encouragement to refocus on the next play, and redirect attention to the team's collective effort

(E) The program should include exposure to diverse lifetime activities (yoga,

swimming, cycling, hiking, martial arts), self-assessment and SMART goal-setting workshops, a personal fitness portfolio tracking individual progress over years, community partnerships for facility access, and student choice in activities — because research shows autonomy, competence, and relatedness drive long-term motivation

15. Body Systems and Exercise

Circle the correct answer

141. Why do muscles work in pairs, such as the biceps and triceps, rather than working alone?

(A) Because muscles work better when they are competing against each other (B) Because one muscle gets tired and the other takes over as a backup (C) Because the body always needs two of everything for symmetry (D) Because muscles can only pull, not push, so a second muscle is needed to reverse the movement

142. A student wants to improve their long jump distance. Which phase of the jump should they focus on to maximize their result?

(A) The takeoff phase, where they convert running speed into upward and forward momentum (B) The walking-back phase, because resting between jumps is most important (C) The warm-up phase, because stretching alone determines jump distance (D) The landing phase, where they should try to bounce forward after touching down

143. What are the three types of muscle tissue found in the human body?

(A) Upper body, lower body, and core muscle (B) Fast-twitch, slow-twitch, and medium-twitch muscle (C) Skeletal muscle, cardiac muscle, and smooth muscle (D) Red muscle, white muscle, and pink muscle

144. How does the Healthy Fitness Zone in FitnessGram differ from a percentile ranking?

(A) The Healthy Fitness Zone indicates whether your score meets a health-related standard for reduced disease risk, while a percentile ranking compares you to other students your age (B) The Healthy Fitness Zone only applies to cardiovascular tests while percentile rankings apply to all tests (C) Percentile rankings are used for younger children and the Healthy Fitness Zone is for adults only (D) There is no meaningful difference — both systems rank students from best to worst

145. A student eats cereal with milk, a banana, and orange juice for breakfast. Which food groups are represented in this meal?

(A) Grains, protein, and vegetables (B) Protein, vegetables, and grains (C) Grains, dairy, and fruits (D) Fruits, vegetables, and dairy

146. Why do nutritionists recommend eating a variety of colorful fruits and vegetables?

(A) Because the body can only absorb nutrients from brightly colored foods (B) Because eating one color of food every day is dangerous (C) Because colorful foods always taste better than plain-colored foods (D) Because different colors indicate different vitamins, minerals, and antioxidants that each provide unique health benefits

Write the answer

147. After a 30-minute soccer game, which cool-down routine would be most effective?

Answer: _____

148. In many sports, teams that practice set plays (predetermined movement patterns) perform better than teams that rely entirely on improvisation. However, the best teams combine both. Explain why pure improvisation and pure set plays each have limitations.

Answer: _____

149. A beginning gymnast is learning a forward roll. What is the correct body position they should maintain throughout the roll?

Answer: _____

150. What is mental imagery (visualization) and how do athletes use it to improve performance?

Answer: _____

Match each question to its answer

1. Compare swimming and running as lifetime activities. What are the advantages and disadvantages of each for long-term health maintenance? →

2. Some athletes argue that warm-ups waste valuable practice time. Evaluate this claim considering both short-term and long-term effects on performance and safety. →

3. A school is designing a new track and field program for beginners. Evaluate which combination of events would best develop a well-rounded young athlete. →

4. What is the primary purpose of a warm-up before physical activity? →

5. During a soccer game, a defender sees an opponent sprinting behind their teammate who cannot see the runner approaching. What should the defender communicate and how? →

- (A) To gradually increase heart rate and blood flow to prepare muscles for exercise
 - (B) A mix of one sprint, one distance run, one jumping event, and one throwing event to develop speed, endurance, power, and coordination
 - (C) The claim is flawed because warm-ups reduce injury risk and improve performance quality, making the remaining practice time more productive and keeping athletes healthy long-term
 - (D) Shout a clear warning like 'Player behind you!' or 'Man on!' loudly enough for the teammate to hear and react
 - (E) Swimming is low-impact (easy on joints, suitable for aging bodies and injuries), works the whole body, but requires pool access. Running is accessible anywhere with minimal equipment but is high-impact on joints and may cause overuse injuries over decades
-

16. Body Systems and Exercise

Circle the correct answer

151. A coach tells the team to drink 8 glasses of water per day. Another source says active kids need more. Evaluate how a young athlete should determine their own hydration needs.

- (A) Follow the 8-glass rule exactly regardless of activity, weather, or body size
- (B) Drink as much water as possible at all times until the stomach hurts
- (C) Monitor urine color (pale yellow means well-hydrated), weigh before and after practice to measure fluid loss, and drink extra during hot weather and intense training
- (D) Only drink water at scheduled meal times, never during exercise

152. A student who always skips the cool-down notices they consistently feel more sore the day after exercise compared to classmates who cool down properly. Explain the likely connection.

- (A) Cool-downs cause soreness, so skipping them should reduce it
- (B) The student is sore because they exercise harder than everyone else in class
- (C) There is no connection — the student is just naturally more sensitive to soreness
- (D) Skipping the cool-down means muscles remain shortened and tight after exercise, and metabolic waste products are not efficiently cleared, contributing to increased soreness

153. Your family is planning a weekend outing. How could you suggest an activity that promotes physical, social, and emotional wellness for everyone?

- (A) Suggest a family hike on a nature trail, which provides physical activity (walking/climbing), social bonding (shared experience and conversation), and emotional wellness (stress relief from nature and quality time together)
- (B) Go to a

restaurant and sit for several hours, which addresses social wellness but ignores physical activity (C) Suggest everyone sit separately and watch their own screens for the whole weekend (D) Plan a competitive weightlifting session that only the most fit family members can participate in

154. What is flexibility?

(A) The ability to hold your breath for a long time underwater (B) The ability of a joint to move through its complete range of motion (C) The ability to lift the heaviest weight in the gym (D) The ability to run faster than other students

155. Some coaches use punishment like extra running laps when players make mistakes during practice. Evaluate this coaching approach based on sports psychology research on motivation.

(A) Punishment is the most effective motivator because athletes perform best when they fear consequences (B) Punishment and positive reinforcement produce identical long-term results, and this is the standard approach used in most cases (C) Running laps is always good because it improves fitness regardless of the reason (D) Punishment-based coaching is generally counterproductive because it creates fear of failure, reduces intrinsic motivation, discourages risk-taking needed for skill development, and damages the coach-athlete relationship

156. A swimmer notices they are drifting to one side while doing the backstroke. What technique adjustment should they make?

(A) Ensure both arms are pulling with equal force and entering the water directly above each shoulder in a straight line (B) Kick harder with only the left leg to push back to center (C) Stop using arms and only kick to stay straight (D) Lift the head higher out of the water to see where they are going

Write the answer

157. Two relay runners must exchange a baton without dropping it during a race. What does this require beyond just running fast?

Answer: _____

158. Which of the following is an example of a dynamic stretch appropriate for a soccer warm-up?

Answer: _____

159. Why is finding physical activities you genuinely enjoy considered one of the most important factors for lifelong fitness?

Answer: _____

160. A soccer player is choosing a pre-game meal two hours before kickoff. Which meal would provide the best sustained energy for the game?

Answer: _____

Match each question to its answer

1. Why is it important to use proper form and technique during exercises rather than just completing the movement any way possible? →
2. Design a 3-point safety checklist that a student should complete before starting any new physical activity or sport for the first time. →
3. In basketball, what is a 'zone defense' strategy? →
4. Why do team sports have rules? →
5. Why do endurance athletes like marathon runners typically have much higher VO₂ max values than athletes in sports like baseball or golf? →

(A) A defensive strategy where each player guards a specific area of the court rather than a specific opponent

(B) Endurance sports require sustained high-intensity aerobic effort that drives long-term cardiovascular adaptations, while skill-based sports demand short bursts of activity that do not maximally stress the aerobic system

(C) Check that proper equipment and footwear are available, learn correct technique from a qualified instructor, and start at a beginner level with gradual progression

(D) Proper form distributes forces correctly through the body, reducing stress on vulnerable joints and tissues that could lead to injury

(E) To ensure fair play, keep participants safe, and create a structured game that everyone can enjoy

Riddle & Joke Break

Guess the answer, then check the key!

161. Why did the yoga mat break up with the treadmill?
 162. What do you call a dinosaur that does ballet?
 163. Why was the basketball court always wet?
 164. What's a sprinter's favorite subject in school?
 165. Why did the soccer ball go to the doctor?
 166. What kind of exercise do lazy people do?
-

Answer Key

1. A — To pull on bones and produce movement

2. A — They shorten and become thicker, pulling on the attached bone
3. A — The chest muscles and triceps
4. A — The leg muscles have become fatigued from repeated contractions and need time to recover
5. C — Because muscles can only pull, not push, so a second muscle is needed to reverse the movement
6. D — 206
7. To provide support, protect organs, and enable movement
8. Because calcium strengthens bones during the years when the skeleton is still growing
9. Wait for the bone to fully heal and get medical clearance before resuming sports
10. Weight-bearing exercises put stress on bones through impact with the ground, which stimulates bone growth, while water supports the body and reduces that stress

Matching (Body Systems and Exercise): 1→C, 2→A, 3→B, 4→D, 5→E

11. C — Five
 12. B — Vegetables
 13. A — Because no single food group provides all the nutrients the body needs to function properly
 14. C — Grains, dairy, and fruits
 15. D — This approach would hurt performance because the body also needs carbohydrates for energy, vitamins for recovery, and calcium for strong bones
 16. C — Carbohydrates, proteins, and fats
 17. Carbohydrates
 18. To build and repair body tissues including muscles
 19. Whole grain pasta with chicken and vegetables
 20. This belief is inaccurate because healthy fats are essential for brain function, vitamin absorption, and cell structure
- Matching (Nutrition and Fitness): 1→A, 2→C, 3→E, 4→B, 5→D
21. B — To gradually increase heart rate and blood flow to prepare muscles for exercise

22. A — More blood delivers extra oxygen and nutrients to the muscles, fueling them for harder work
23. B — Light jogging followed by basketball-related movements like shuffling, arm circles, and practice layups
24. A — Cold muscles are less elastic and more susceptible to tearing because they have not received the increased blood flow and temperature that make them flexible
25. D — The claim is flawed because warm-ups reduce injury risk and improve performance quality, making the remaining practice time more productive and keeping athletes healthy long-term
26. D — Stretching that involves controlled movements through a full range of motion without holding a position
27. Dynamic stretching activates muscles and increases blood flow for performance, while static stretching relaxes muscles and promotes recovery after they are already warm
28. Walking lunges with a torso twist
29. Prolonged static stretching temporarily decreases muscle stiffness and neural activation, reducing the muscle's ability to contract powerfully
30. Both are reasonable because gymnastics requires maximum range of motion that justifies static stretching despite temporary power loss, while sprinting depends on explosive power that static stretching could impair
Matching (Warm-Up and Stretching): 1→B, 2→D, 3→A, 4→E, 5→C
31. C — To ensure fair play, keep participants safe, and create a structured game that everyone can enjoy
32. D — A defensive strategy where each player guards a specific area of the court rather than a specific opponent
33. A — The coach is accepting more defensive risk in exchange for greater attacking power to try to score an equalizing goal
34. A — Direct more serves to the back-left corner to exploit the weakness while watching for adjustments the opposing team might make
35. D — Set plays become predictable if overused because opponents learn to anticipate them, while pure improvisation lacks coordination because teammates cannot predict each other's movements
36. B — Treating opponents, teammates, coaches, and officials with respect and

fairness while competing with integrity

37. It shows mutual respect between competitors and acknowledges that both teams gave their best effort regardless of the outcome
38. Accept the call respectfully, maintain composure, and refocus on the next play rather than arguing or showing frustration
39. Taunting is not acceptable sportsmanship because celebrating should express joy for your own achievement, not belittle or disrespect the opposing team
40. Acknowledge that everyone makes mistakes, offer encouragement to refocus on the next play, and redirect attention to the team's collective effort
Matching (Team Sports Fundamentals): 1→B, 2→E, 3→C, 4→D, 5→A
41. D — Track events (running races) and field events (jumping and throwing)
42. A — Starting blocks provide a solid surface to push against, allowing a more powerful and explosive start
43. D — The takeoff phase, where they convert running speed into upward and forward momentum
44. A — Because the outer lanes have a longer circumference around the curve, so the staggered start equalizes the total distance
45. D — A mix of one sprint, one distance run, one jumping event, and one throwing event to develop speed, endurance, power, and coordination
46. D — Freestyle (front crawl), backstroke, breaststroke, and butterfly
47. It creates an efficient breathing rhythm that prevents water inhalation and ensures muscles receive continuous oxygen
48. Ensure both arms are pulling with equal force and entering the water directly above each shoulder in a straight line
49. Lane designation prevents collisions between swimmers of different speeds, one-way traffic maintains orderly flow, and no shallow diving prevents spinal injuries from hitting the bottom
50. Floating on your back allows you to rest and breathe indefinitely without expending energy, which can save your life if you fall into deep water
Matching (Individual Sports and Activities): 1→B, 2→A, 3→D, 4→E, 5→C
51. D — The study of how forces act on the body and how the body produces movement
52. B — Hip rotation generates force from the large muscles of the legs and core,

which transfers through the torso to the arm, producing greater throwing speed than arm strength alone

53. C — Bending deeper at the knees and hips before jumping to create a longer force application time, then extending all joints explosively and using arm swing for additional upward momentum
54. B — Bending the knees increases the time over which the landing force is absorbed, reducing the peak force on joints and bones compared to the sudden stop of a straight-leg landing
55. A — The claim is supported because proper technique utilizes the full kinetic chain, transferring force efficiently from legs through core to arm, while raw strength without coordination wastes energy and produces less racket speed
56. D — 220 minus your age in years
57. At lower heart rates the body primarily burns fat using oxygen, while at higher heart rates it increasingly relies on carbohydrates and anaerobic energy because oxygen delivery cannot keep up with demand
58. 124 to 144 beats per minute, calculated as $206 \text{ max HR} \times 0.60$ and 0.70
59. Training only in the low-intensity zone does not stress the cardiovascular system enough to trigger adaptations like increased stroke volume, higher lactate threshold, or improved oxygen utilization needed for racing
60. A trained heart becomes larger and stronger, pumping more blood per beat (increased stroke volume), so it needs fewer beats per minute to deliver the same amount of blood at rest
Matching (Sports Science): 1→B, 2→C, 3→A, 4→E, 5→D
61. C — Specific, Measurable, Achievable, Relevant, and Time-bound
62. A — Cardiovascular endurance, the ability of the heart and lungs to supply oxygen during sustained activity
63. C — The PACER test (Progressive Aerobic Cardiovascular Endurance Run), a 20-meter shuttle run with increasing speed
64. C — The number of times your heart beats per minute while you are completely at rest, typically measured first thing in the morning
65. A — The sit-and-reach test, where you sit on the floor with legs extended and reach forward toward or past your toes
66. B — A baseline gives you a starting point to measure progress against, so you can see how much you have improved and adjust your plan if needed

67. Muscular strength is the maximum force a muscle can exert in a single effort, while muscular endurance is the ability of a muscle to repeat contractions over time without fatigue
68. Individual factors like genetics, body type, growth rate, prior activity level, nutrition, and sleep all influence how each person responds to training
69. It means the goal has a specific deadline or timeframe for completion, such as achieving a target within 8 weeks
70. The Healthy Fitness Zone indicates whether your score meets a health-related standard for reduced disease risk, while a percentile ranking compares you to other students your age
Matching (Fitness Assessment & Goal Setting): 1→B, 2→A, 3→D, 4→E, 5→C
71. A — A physical activity that can be enjoyed throughout a person's entire life, from childhood into old age, such as swimming, cycling, hiking, or yoga
72. B — There are commonly recognized dimensions including physical, emotional, social, intellectual, and spiritual wellness, with some models adding environmental, occupational, and financial wellness
73. B — At least 60 minutes of moderate-to-vigorous physical activity every day, including aerobic activity, muscle-strengthening, and bone-strengthening activities
74. C — Frequency (how often), Intensity (how hard), Time (how long), and Type (what kind of activity)
75. A — It is a simple method to estimate exercise intensity — if you can talk but not sing, you are in the moderate-intensity zone; if you can only say a few words before pausing to breathe, you are in the vigorous zone
76. D — Many adults relied on organized school sports for physical activity and never developed independent exercise habits, so building self-directed fitness skills and finding enjoyable lifetime activities now creates habits that persist after school ends
77. Exercise releases endorphins that improve mood, reduces stress hormones like cortisol, improves sleep quality, boosts self-esteem through accomplishment, and can reduce symptoms of anxiety and depression
78. Health-related fitness components (cardiovascular endurance, muscular strength and endurance, flexibility, body composition) directly impact disease prevention and daily functioning, while skill-related components (speed, agility, power, coordination, balance, reaction time) primarily support athletic performance

79. People are far more likely to maintain an exercise habit long-term if they find the activity intrinsically enjoyable, because internal motivation is more sustainable than external pressure or obligation
80. Reversibility means that fitness gains are lost when you stop training — muscles weaken, cardiovascular capacity decreases, and flexibility diminishes, which is why consistent physical activity throughout life is necessary to maintain health
Matching (Lifetime Fitness & Wellness): 1→B, 2→D, 3→E, 4→A, 5→C
81. A — 206
82. D — A unit that measures the amount of energy in food
83. C — Cold muscles are less elastic and more susceptible to tearing because they have not received the increased blood flow and temperature that make them flexible
84. D — It shows mutual respect between competitors and acknowledges that both teams gave their best effort regardless of the outcome
85. A — Lane designation prevents collisions between swimmers of different speeds, one-way traffic maintains orderly flow, and no shallow diving prevents spinal injuries from hitting the bottom
86. D — Squats or lunges, because these exercises require the quadriceps to extend the knee under load while supporting body weight
87. Cardiovascular endurance, the ability of the heart and lungs to supply oxygen during sustained activity
88. Apply FITT by exercising 4-5 days per week (Frequency), at moderate-to-vigorous intensity matching basketball's cardiovascular demands (Intensity), for 30-60 minutes per session (Time), choosing activities like running, cycling, or pickup basketball at a community center (Type)
89. The lungs
90. Their weight stays approximately the same because energy in equals energy out
Matching (Olympic Sports & Athletic Training): 1→C, 2→D, 3→E, 4→B, 5→A
91. C — Training with less oxygen causes the body to produce more red blood cells, which carry extra oxygen when returning to lower altitude
92. A — These are signs of dehydration, and the student should stop exercising, move to shade, and drink water immediately
93. B — They increased the training volume too quickly, not giving the body enough time to adapt to the higher workload

94. A — Working together toward a shared goal by combining individual efforts into coordinated group action
95. D — Floating on your back allows you to rest and breathe indefinitely without expending energy, which can save your life if you fall into deep water
96. A — Combine long slow runs to build aerobic base with interval training sessions at 90-95% max heart rate to push the oxygen delivery system to adapt and improve
97. This recommendation is inappropriate — it ignores the student's fitness level, provides no progressive overload, risks overuse injury, offers no rest days, and uses a one-size-fits-all approach instead of personalized planning
98. This claim is misleading — while 30 days of exercise can start building fitness, significant body transformation requires months of consistent training. Extreme programs risk injury for beginners, ignore individual differences, and use unrealistic before-and-after marketing that often involves dehydration, lighting tricks, or unreported factors
99. The heart is beating faster to meet the increased oxygen demand from the working muscles
100. During intense exercise lasting more than 60 minutes, when the body needs to replace electrolytes lost in sweat
Matching (Dance & Rhythmic Movement): 1→C, 2→E, 3→A, 4→D, 5→B
101. D — The diaphragm muscle cramps when it is suddenly forced to work hard without being gradually prepared
102. C — The relationship between the calories consumed through food and the calories burned through activity and body functions
103. D — No, they should stop immediately because sharp pain is the body's warning signal that something may be injured or at risk of injury
104. D — Direct more serves to the back-left corner to exploit the weakness while watching for adjustments the opposing team might make
105. B — Freestyle (front crawl), backstroke, breaststroke, and butterfly
106. C — The first player has an external locus of control, blaming outside factors they cannot change, while the second player has an internal locus of control and growth mindset, focusing on factors within their power to improve
107. A baseline gives you a starting point to measure progress against, so you can see how much you have improved and adjust your plan if needed

108. Positively, social media can provide workout ideas, connect people to fitness communities, and inspire healthy behaviors. Negatively, it promotes unrealistic body standards, encourages extreme diets, spreads misinformation about exercise, and can create unhealthy comparison and obsession
109. Body temperature increases as muscles generate heat
110. Skipping meals depletes the body's energy stores, leading to fatigue, poor concentration, and reduced athletic performance rather than making someone faster
Matching (Water Safety & Aquatics): 1→E, 2→C, 3→A, 4→B, 5→D
111. A — To deliver oxygen and nutrients to working muscles through the blood
112. C — The grain product contains all three parts of the grain kernel: bran, germ, and endosperm
113. B — Both are reasonable because gymnastics requires maximum range of motion that justifies static stretching despite temporary power loss, while sprinting depends on explosive power that static stretching could impair
114. B — The coach is accepting more defensive risk in exchange for greater attacking power to try to score an equalizing goal
115. B — Core muscles stabilize the body during rotations, inversions, and balance positions that require precise body control in the air and on apparatus
116. D — The study of how forces act on the body and how the body produces movement
117. Both positions have merit — fitness testing is valuable when it emphasizes personal improvement and is conducted privately, but it can be harmful when scores are shared publicly or used to compare students
118. Apply the principle of individuality — everyone starts at their own level, and flexibility improves with consistent practice over time. Beginners should use modifications, focus on personal progress rather than comparison, and understand that yoga is about improving your own range of motion
119. To provide support, protect organs, and enable movement
120. This belief is inaccurate because healthy fats are essential for brain function, vitamin absorption, and cell structure
Matching (Adventure & Outdoor Recreation): 1→B, 2→E, 3→C, 4→D, 5→A
121. D — To pull on bones and produce movement
122. A — How does 12 grams of added sugar compare to daily recommended limits,

and does the bar provide meaningful nutrients like protein, fiber, and vitamins beyond just sugar?

123. B — The plan should include a baseline test, progressive overload schedule adding 2 push-ups per week, 3-4 training sessions per week with rest days between, supplementary exercises for chest and triceps, and a reassessment at week 4
124. B — More blood delivers extra oxygen and nutrients to the muscles, fueling them for harder work
125. B — Bending deeper at the knees and hips before jumping to create a longer force application time, then extending all joints explosively and using arm swing for additional upward momentum
126. C — Perform 10-15 minutes of static hamstring and lower back stretching after warming up each day, holding each stretch for 20-30 seconds
127. The personal improvement and enjoyment approach better supports lifetime fitness because it builds intrinsic motivation, reduces dropout from discouragement, is inclusive of all ability levels, and develops the self-directed fitness skills needed when organized competition is no longer available in adulthood
128. Their hamstring flexibility would gradually increase, allowing them to reach further in the sit-and-reach test
129. The belt system breaks a complex journey into achievable milestones, providing visible progress markers that motivate continued practice through clear short-term goals within a long-term path
130. The claim is supported because proper technique utilizes the full kinetic chain, transferring force efficiently from legs through core to arm, while raw strength without coordination wastes energy and produces less racket speed
Matching (Body Systems and Exercise): 1→B, 2→D, 3→A, 4→C, 5→E
131. D — Because students will be thrown many times during training and must know how to land safely to prevent injuries
132. D — Cycling offers schedule flexibility (no team coordination needed), scalable intensity (commuting to vigorous training), low impact on joints, practical transportation value, solo or social options, and does not require a minimum number of participants to enjoy
133. C — Specific, Measurable, Achievable, Relevant, and Time-bound
134. A — The number of times your heart beats per minute while you are completely

at rest, typically measured first thing in the morning

135. B — There are commonly recognized dimensions including physical, emotional, social, intellectual, and spiritual wellness, with some models adding environmental, occupational, and financial wellness
136. D — Wait for the bone to fully heal and get medical clearance before resuming sports
137. Because by the time you feel thirsty, your body is already partially dehydrated and performance has begun to decline
138. Increase PACER score from 25 to 32 laps within 8 weeks by jogging 15-20 minutes three times per week and adding one extra lap per week
139. It creates an efficient breathing rhythm that prevents water inhalation and ensures muscles receive continuous oxygen
140. Weight-bearing exercises put stress on bones through impact with the ground, which stimulates bone growth, while water supports the body and reduces that stress
Matching (Body Systems and Exercise): 1→B, 2→E, 3→A, 4→D, 5→C
141. D — Because muscles can only pull, not push, so a second muscle is needed to reverse the movement
142. A — The takeoff phase, where they convert running speed into upward and forward momentum
143. C — Skeletal muscle, cardiac muscle, and smooth muscle
144. A — The Healthy Fitness Zone indicates whether your score meets a health-related standard for reduced disease risk, while a percentile ranking compares you to other students your age
145. C — Grains, dairy, and fruits
146. D — Because different colors indicate different vitamins, minerals, and antioxidants that each provide unique health benefits
147. 5 minutes of walking around the field followed by 5 minutes of static stretches for the major muscle groups used
148. Set plays become predictable if overused because opponents learn to anticipate them, while pure improvisation lacks coordination because teammates cannot predict each other's movements
149. Chin tucked to chest, back rounded, hands placed on the mat, and body curled

into a tight ball shape

150. Mental imagery is the practice of vividly imagining performing a skill successfully in your mind, which activates similar neural pathways as physical practice and helps build confidence and muscle memory

Matching (Body Systems and Exercise): 1→E, 2→C, 3→B, 4→A, 5→D

151. C — Monitor urine color (pale yellow means well-hydrated), weigh before and after practice to measure fluid loss, and drink extra during hot weather and intense training
152. D — Skipping the cool-down means muscles remain shortened and tight after exercise, and metabolic waste products are not efficiently cleared, contributing to increased soreness
153. A — Suggest a family hike on a nature trail, which provides physical activity (walking/climbing), social bonding (shared experience and conversation), and emotional wellness (stress relief from nature and quality time together)
154. B — The ability of a joint to move through its complete range of motion
155. D — Punishment-based coaching is generally counterproductive because it creates fear of failure, reduces intrinsic motivation, discourages risk-taking needed for skill development, and damages the coach-athlete relationship
156. A — Ensure both arms are pulling with equal force and entering the water directly above each shoulder in a straight line
157. Trust, timing, practice, and clear non-verbal communication between the two runners
158. Walking lunges with a torso twist
159. People are far more likely to maintain an exercise habit long-term if they find the activity intrinsically enjoyable, because internal motivation is more sustainable than external pressure or obligation
160. Whole grain pasta with chicken and vegetables
Matching (Body Systems and Exercise): 1→D, 2→C, 3→A, 4→E, 5→B
161. It needed more space to stretch things out!
162. A tutu-saurus rex!
163. Because the players kept dribbling!
164. Jog-raphy!
165. It was feeling deflated!

166. Diddly squats!

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